

**DW-SRF 2013 Project**  
**Green Project Reserve Calculation**

Green Project Reserve Methodology using format from EPA's • June 22, 2009 guidance for GPR business cases

**ESTIMATE OF VALUE OF WATER LOSS WORKSHEET**

<b>SRF PROJECT ID #</b>	<b>2013-30</b>
1 Date:	25-Jul-13
2 PWSID #	ME0091490
3 System	<b>Southwest Harbor, Town of</b>
4 Project Name	
5 Location	Main Street
6 Engineering Consultant	Olver Associates
7 Existing Main size, age, and type	6" cast iron unlined, 1910 vintage
8 Proposed New Water Main size and type	12" ductile iron cement lined
9 New Main Pipe Length	6,000
10 Estimated Project Cost	\$ 1,623,000

**Note: Data from Utilities Annual Report to Maine Public Utilities Commission**

<u>Page</u>	<u>Line</u>	<u>Description</u>	<u>Units</u>	<u>2011 data</u>
W-12	15	Total Production Water	gallons per year	117,864,000
W-12	17	Total Revenue Water	gallons per year	62,001,000
W-12	19	Total Non-Revenue Water	gallons per year	55,863,000
W-12	19	Percent Non-Revenue Water		47%
W-12	22	Utility Usage - treatment	gallons per year	2,925,000
W-12	23	Utility Usage - hydrant flushing	gallons per year	100,000
W-12	14	Utility Usage - bleeders	gallons per year	12,000
W-12	26	Utility Usage - all other (running customers & blow-offs)	gallons per year	800
W-12	30	Fire Protection	gallons per year	50,000
W-12	31	Main Breaks	gallons per year	
W-12	35	Flushing Mains	gallons per year	42,000
W-12	36	Total Accounted for Non-Revenue Water	gallons per year	3,129,800
W-12	37	Total Unaccounted Non-Revenue Water	gallons per year	52,733,200
		<b>Estimated Water Loss From ALL Breaks, Leaks, &amp; Bleeders</b>	<b>gallons per year</b>	<b>52,788,000</b>
		<i>(PUC Accounts total of lines 14, 26,31,35 and 37)</i>		
		<b>% of Water Loss of Total Production Water</b>		<b>45%</b>
		<i>(PUC Lines 14,26,31,35,37 divided by Line 15)</i>		
W-9	9	Total Transmission Mains	feet	19,274
W-9	23	Total Distribution Mains	feet	83,004
		Total Mains in Service	feet	102,278
			miles	19
		<u>Estimated Distribution System Losses:</u>		
		Loss Water per mile of pipe	gallons per mile per year	2,725,128
		Loss Water per foot of pipe per year	gallons per foot per year	516
		Loss water per foot of pipe per day	gallons per foot per day	1.41
		<u>Water loss will vary with age of water main - assume Straight line projection as follows:</u>		
		0 to 25 year old pipe	0 % of Total Loss	gallons per mile per year -
		26 to 50 year old pipe	10% of Total Loss	gallons per mile per year 272,513
		51 to 75 year old pipe	30% of Total Loss	gallons per mile per year 817,538
		over 75 year old pipe	60% of Total Loss	gallons per mile per year 1,635,077
			All Losses:	2,725,128
		Age of Main to be replaced	years	100
		Length of Main to be Replaced	mile	1.14
		<b>CALCULATED WATER LOSS - FOR PROPOSED PROJECT</b>	<b>gallons per year</b>	<b>1,858,042</b>
W-2	29c	<b>Total PRODUCTION COST of Water</b>	<b>\$/year</b>	<b>\$ 420,570</b>
W-12	15	Total Production Water	1,000 gallons per year	117,864
		<b>Production Cost of Water</b>	<b>per 1,000 gallons</b>	<b>\$ 3.57</b>
		<b>PROJECTED ANNUAL VALUE of WATER LOSS</b>	<b>per year</b>	<b>\$ 6,630</b>

Annual Savings	\$	6,630
PV Factor ( uniform series present worth factor (1%, 75 years):	\$	52.587
<b>Present Value of Savings over Economic life of pipeline:</b>	<b>\$</b>	<b>348,651</b>
<b>Project Cost</b>	<b>\$</b>	<b>1,623,000</b>
PV Percent of Project Cost:		21.5%
<b>ESTIMATED % Green</b>		<b>21.5%</b>
<b>\$ Amount Green</b>	<b>\$</b>	<b>348,651</b>

322,915 gallons per day